

WHAT IS CLAIMED IS:

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~~1. A method for outputting camera-formatted data to a digital camera interface, the camera-formatted data corresponding to application-formatted data from an application program, the method comprising the steps of:~~

~~starting a print operation for the application program;~~

~~selecting a camera driver corresponding to the digital camera as an output device driver for the print operation;~~

~~printing the application-formatted data from the application program to the selected camera driver;~~

~~forming the camera-formatted data based on the application-formatted data and according to a digital camera format; and~~

~~outputting the camera-formatted data from the camera driver to a digital camera interface.~~

~~2. A method according to Claim 1, wherein the camera driver is selected through a print dialog generated by the application program.~~

~~3. A method according to Claim 1, wherein the camera driver is selected as a default output device driver.~~

~~4. A method according to Claim 1, further comprising the step of selecting the digital camera format from plural different predetermined digital camera formats.~~

~~5. A method according to Claim 1, wherein the application-formatted data is printed to the~~

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selected camera driver through a graphical device interface module.

5           6. A method according to Claim 5, wherein the camera-formatted data is output from the camera driver to the digital camera interface through the graphical device interface module.

10           7. A method according to Claim 6, wherein the application-formatted data comprises graphical device interface commands.

15           8. A method according to Claim 7, wherein the camera-formatted data comprises a raster image and a thumbnail image.

20           9. A method according to Claim 8, wherein the step of forming the camera-formatted data based on the application-formatted data further comprises the steps of:

              forming the raster image based on the graphical device interface commands;

              forming the thumbnail image based on the raster image; and

25           formatting and compressing the raster image and the thumbnail image according to the digital camera format.

30           10. A method according to Claim 9, wherein the digital camera format comprises:

              a format for the raster image;

              a format for the thumbnail image; and

              a format for relational information that relates the thumbnail image to the raster image.

35           11. A method according to Claim 10, wherein the format for the raster image comprises a

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first JPEG file, the format for the thumbnail image comprises a second JPEG file, and the format for the relational information comprises a format for disposing the relational information in the second JPEG file.

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12. A method according to Claim 11, wherein the digital camera format further comprises a naming convention for naming data for the raster image and for naming data for the thumbnail image.

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13. A method according to Claim 12, wherein the digital camera format further comprises a format for storing non-image data.

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14. A method according to Claim 13, wherein the non-image data further comprises a creation date, a type of the application program, and ownership information.

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15. A method according to Claim 13, wherein the non-image data further comprises sound data stored in a different file than the raster image and the thumbnail image.

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16. A method according to Claim 1, wherein the digital camera interface is connectable to a digital camera and to a removable camera memory medium.

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17. A method according to Claim 1, wherein the application program runs on a computer on a network, and the digital camera interface is on a device attached to the network.

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18. A method for an application program to output application-formatted data to a camera

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driver, the camera driver corresponding to a digital camera, the method comprising the steps of:

starting a print operation;

5 selecting the camera driver corresponding to the digital camera as an output device driver for the print operation; and

printing application-formatted data to the camera driver.

10 19. A method according to Claim 18, wherein the step of selecting the camera driver further comprises generating a print dialog through which the camera driver is selected.

15 20. A method according to Claim 18, wherein the step of selecting the camera driver further comprises selecting the camera driver as a default output device driver.

20 21. A method according to Claim 18, wherein the application-formatted data is printed to the selected camera driver through a graphical device interface module.

25 22. A method according to Claim 21, wherein the application-formatted data comprises graphical device interface commands.

30 23. A method for outputting camera-formatted data to a digital camera interface, the camera-formatted data corresponding to application-formatted data from an application program, the method comprising the steps of:

35 receiving application-formatted data from the application program;

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forming the camera-formatted data based on the application-formatted data and according to a digital camera format; and

5 outputting the camera-formatted data to a digital camera interface.

10 24. A method according to Claim 23, further comprising the step of selecting the digital camera format from plural different predetermined digital camera formats.

15 25. A method according to Claim 23, wherein the application-formatted data is received from the application program through a graphical device interface module.

20 26. A method according to Claim 25, wherein the camera-formatted data is output from the camera driver to the digital camera interface through the graphical device interface module.

25 27. A method according to Claim 26, wherein the application-formatted data comprises graphical device interface commands.

30 28. A method according to Claim 27, wherein the camera-formatted data comprises a raster image and a thumbnail image.

35 29. A method according to Claim 28, wherein the step of forming the camera-formatted data based on the application-formatted data further comprises the steps of:

30 forming the raster image based on the graphical device interface commands;

35 forming the thumbnail image based on the raster image; and

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formatting and compressing the raster image and the thumbnail image according to the digital camera format.

5 30. A method according to Claim 29, wherein the digital camera format comprises:

a format for the raster image;

a format for the thumbnail image; and

a format for relational information that

10 relates the thumbnail image to the raster image.

15 31. A method according to Claim 30, wherein the format for the raster image comprises a first JPEG file, the format for the thumbnail image comprises a second JPEG file, and the format for the relational information comprises a format for disposing the relational information in the second JPEG file.

20 32. A method according to Claim 31, wherein the digital camera format further comprises a naming convention for naming data for the raster image and for naming data for the thumbnail image.

25 33. A method according to Claim 32, wherein the digital camera format further comprises a format for storing non-image data.

30 34. A method according to Claim 33, wherein the non-image data further comprises a creation date, a type of the application program, and ownership information.

35 35. A method according to Claim 34, wherein the non-image data further comprises sound data stored in a different file than the raster image and the thumbnail image.

36. A method according to Claim 23, wherein the digital camera interface is connectable to a digital camera and to a removable camera memory medium.

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37. An apparatus for outputting camera-formatted data to a digital camera interface, the camera-formatted data corresponding to application-formatted data from an application program, the apparatus comprising:

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a memory including a region for storing executable process steps; and

15 a processor for executing the executable process steps;

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wherein the executable process steps include steps of: (a) starting a print operation for the application program; (b) selecting a camera driver corresponding to the digital camera as an output device driver for the print operation; (c) printing the application-formatted data from the application program to the selected camera driver; (d) forming the camera-formatted data based on the application-formatted data and according to a digital camera format; and (e) outputting the camera-formatted data from the camera driver to a digital camera interface.

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30 38. An apparatus according to Claim 37, wherein the camera driver is selected through a print dialog generated by the application program.

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35 39. An apparatus according to Claim 37, wherein the camera driver is selected as a default output device driver.

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40. An apparatus according to Claim 37, wherein the executable process steps further

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comprise the step of selecting the digital camera format from plural different predetermined digital camera formats.

5 41. An apparatus according to Claim 37, wherein the application-formatted data is printed to the selected camera driver through a graphical device interface module.

10 42. An apparatus according to Claim 41, wherein the camera-formatted data is output from the camera driver to the digital camera interface through the graphical device interface module.

15 43. An apparatus according to Claim 42, wherein the application-formatted data comprises graphical device interface commands.

20 44. An apparatus according to Claim 43, wherein the camera-formatted data comprises a raster image and a thumbnail image.

25 45. An apparatus according to Claim 44, wherein the step of forming the camera-formatted data based on the application-formatted data further comprises the steps of:

forming the raster image based on the graphical device interface commands;

30 forming the thumbnail image based on the raster image; and

formatting and compressing the raster image and the thumbnail image according to the digital camera format.

35 46. An apparatus according to Claim 45, wherein the digital camera format comprises:  
a format for the raster image;

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a format for the thumbnail image; and  
a format for relational information that  
relates the thumbnail image to the raster image.

5                   47. An apparatus according to Claim 46,  
wherein the format for the raster image comprises a  
first JPEG file, the format for the thumbnail image  
comprises a second JPEG file, and the format for the  
10                 relational information comprises a format for  
disposing the relational information in the second  
JPEG file.

15                 48. An apparatus according to Claim 47,  
wherein the digital camera format further comprises  
a naming convention for naming data for the raster  
image and for naming data for the thumbnail image.

20                 49. An apparatus according to Claim 48,  
wherein the digital camera format further comprises  
a format for storing non-image data.

25                 50. An apparatus according to Claim 49,  
wherein the non-image data further comprises a  
creation date, a type of the application program,  
and ownership information.

30                 51. An apparatus according to Claim 49,  
wherein the non-image data further comprises sound  
data stored in a different file than the raster  
image and the thumbnail image.

35                 52. An apparatus according to Claim 37,  
wherein the digital camera interface is connectable  
to a digital camera and to a removable camera memory  
medium.

53. An apparatus according to Claim 37, wherein the apparatus and the digital camera interface are connected by through a network connection.

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54. A camera driver, the camera driver comprising computer-executable process steps to output camera-formatted data to a digital camera interface based on application-formatted data from an application program, the computer-executable process steps comprising:

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code to receive application-formatted data from the application program;

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code to form the camera-formatted data based on the application-formatted data and according to a digital camera format; and

code to output the camera-formatted data to the digital camera interface.

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55. A camera driver according to Claim 54, wherein the computer-executable process steps further comprise code to select the digital camera format from plural different predetermined digital camera formats.

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56. A camera driver according to Claim 54, wherein the application-formatted data is received from the application program through a graphical device interface module.

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57. A camera driver according to Claim 56, wherein the camera-formatted data is output from the camera driver to the digital camera interface through the graphical device interface module.

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58. A camera driver according to Claim 57, wherein the application-formatted data comprises graphical device interface commands.

5 59. A camera driver according to Claim 58, wherein the camera-formatted data comprises a raster image and a thumbnail image.

10 60. A camera driver according to Claim 59, wherein code to form the camera-formatted data based on the application-formatted data further comprises:

15 code to form the raster image based on the graphical device interface commands;

code to form the thumbnail image based on the raster image; and

code to format and compress the raster image and the thumbnail image according to the digital camera format.

20 61. A camera driver according to Claim 60, wherein the digital camera format comprises:

a format for the raster image;

a format for the thumbnail image; and

a format for relational information that

25 relates the thumbnail image to the raster image.

30 62. A camera driver according to Claim 61, wherein the format for the raster image comprises a first JPEG file, the format for the thumbnail image comprises a second JPEG file, and the format for the relational information comprises a format for disposing the relational information in the second JPEG file.

35 63. A camera driver according to Claim 62, wherein the digital camera format further comprises

a naming convention for naming data for the raster image and for naming data for the thumbnail image.

5 64. A camera driver according to Claim 63, wherein the digital camera format further comprises a format for storing non-image data.

10 65. A camera driver according to Claim 64, wherein the non-image data further comprises a creation date, a type of the application program, and ownership information.

15 66. A camera driver according to Claim 65, wherein the non-image data further comprises sound data stored in a different file than the raster image and the thumbnail image.

20 67. A camera driver according to Claim 65, wherein the digital camera interface is connectable to a digital camera and to a removable camera memory medium.

25 68. A computer-readable medium which stores a camera driver, the camera driver comprising computer-executable process steps to output camera-formatted data to a digital camera interface based on application-formatted data from an application program, the computer-executable process steps comprising:

30 a receiving step to receive application-formatted data from the application program;

a forming step to form the camera-formatted data based on the application-formatted data and according to a digital camera format; and

35 an outputting step to output the camera-formatted data to a digital camera interface.

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